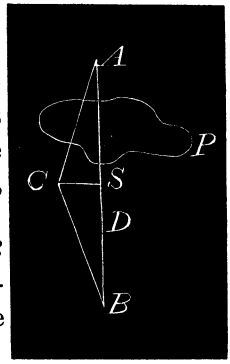
Let P represent the stream or pond and BA, a portion of the line. With the instrument at the station S, set a flag at A, on the opposite side of the stream or pond, and also set a flag at D, any convenient point on the line, in the opposite direction from S. Take any point C, at right-angles with the line AB from the station S and at any convenient distance, which need not be measured. Set the instrument at the station C and direct the sights to the flag at A and note the angle SCA; turn the instrument towards a flag to be placed at a point B, which must be kept in range with the flag at D by an assistant at S, making the angle SCB equal the angle SCA.



Now because of the similar triangles SCA and SCB having a common side CS, we have $SB = SA$; therefore chain back from S to B, and the result will be the length of the line produced to A.

When a back sight to B is not practicable the equivalent of the line SA may be chained by constructing on SA an equilateral triangle one side of which shall lie wholely on the opposite side of the stream.

QUERY. BY THE EDITOR. If a cube be cut by four vertical planes each of which intersects two contiguous vertical faces along their center lines, thus cutting away half the volume of the cube; and if the two ends of the remaining parallelopipedon be each cut by four planes, each of the four planes passing through the center of the upper and the lower base, respectively, making an angle of 45° with the vertical axis and intersecting two contiguous sides of the parallelopipedon at equal angles, thus cutting off the *eight corners* of the parallelopipedon, the remaining solid is a crystaline form known to mineralogists as a "rhombic dodecahedron," (Dana,) having twelve faces and fourteen solid angles. Through the center of this solid let a plane be passed which shall intersect its six parallel edges at right-angles, and the solid will be divided into two equal and similar solids which are identical in form with the honey bee's cell; that is, each will be a hexagon terminated by three planes which make respectively an angle of 54°44′8″ with the axis of the hexagon. Though this is the angle which gives a minimum surface for a given volume, and therefore would seem to indicate intelligence and design in its construction, yet being a crystaline form, may not the physical forces which determine the position of the molecules in the formation of the rhombic dodecahedron influence the action of the bee in the construction of its cell rather than the intelligence and design of the bee?